ASSIGNMENT 4

Textbook Assignment: "Engine Lathes." chapter 6, pages 6-19 through 6-60.

4-1. The depth of a cut made by a milling attachment on an engine lathe is controlled by the

1. lead screw
2. cross feed
3. tailstock position
4. longitudinal feed

4-2. What type of lathe is constructed in such a way that a piece can be removed from its bed to accommodate work of large diameter?

1. A general-purpose screw cutting precision lathe
2. A toolroom lathe
3. A gap lathe
4. A bench lathe

4-3. What tool should you use to remove burrs in the tailstock spindle of a lathe?

1. A grinder
2. A tail center coated with lapping compound
3. A 60° taper reamer
4. A Morse taper reamer

4-4. The workpiece is mounted on the carriage in which of the following lathe operations?

1. Turning
2. Facing
3. Threading
4. Milling

4-5. You must center drill a long piece of round stock that is too large to be passed through the spindle. What lathe attachment is used to support the end being center drilled?

1. A follower rest
2. A center rest
3. A ball bearing center
4. A dead center

4-6. To correct misalignment of lathe centers, you should adjust what part of the lathe?

1. The headstock
2. The ways
3. The tailstock
4. The spindle

4-7. A lathe center is machined to what angle from the axis of the spindle?

1. 15°
2. 30°
3. 45°
4. 60°

4-8. When you use a quick-change tool-holder, tool overhang should NOT exceed what length?

1. Twice the length of the holder
2. Twice the width of the holder
3. Three times the width of the cutting tool
4. Twice the width of the cutting too1

4-9. In a properly formed center hole. the lathe centers rest against what area?

1. The bottom of the drilled hole
2. The sides of the countersunk hole
3. The inner rim of the countersunk hole
4. The outer rim of the countersunk hole

4-10. What is the most accurate method of placing a center hole in a shaft?

1. Boring
2. Drilling
3. Reaming
4. Inserting

4-11. Which of the following workpieces should be turned on a soft mandrel?

1. A plastic gear blank for a 1/4-inch shaft
2. A brass pulley for a 1/2-inch shaft
3. A steel collar with a nonstandard inside diameter
4. A steel spindle with a nonstandard outside diameter

4-12. The size of a mandrel is always marked on what area?

1. The small end inside diameter
2. The large end inside diameter
3. The small end
4. The large end

4-13. Driving torque is usually applied to a mandrel through what lathe accessory?

1. A live center
2. A lathe dog
3. A collet chuck
4. A drill chuck

4-14. The centering of a rough casting in a 4-jaw independent chuck should be checked by what method?

1. Take a light test cut
2. Hold a piece of chalk against the rotating work
3. Bring the tail center against the face of the work
4. Locate the axis of the cylindrical portion with a combination square

4-15. Several duplicate pieces of work may be held on what type of mandrel?

1. Expansion
2. Eccentric
3. Commercial
4. Gang

4-16. When using a 4-jaw chuck and you have a very small run-out tolerance, you should use what gauge to true the work?

1. A dial indicator
2. A dial vernier
3. A center gauge
4. An edge finder

4-17. When work is held in a draw-in collet chuck for precise machining, what is the maximum allowable difference between the diameter of the collet and the diameter of the work?

1. 0.00001 in.
2. 0.0001 in.
3. 0.001 in.
4. 0.002 in.

4-18. When you chuck a thin-walled cylinder in a lathe, you should take which of the following precautions?

1. Insert paper or shim stock under the chuck jaws
2. Expand the chuck jaws against the bore of the work
3. Use only enough jaw pressure to prevent slipping
4. Adjust the jaws individually to prevent distortion

4-19. When mounting irregularly shaped work on a lathe, you can use an angle plate in conjunction with a faceplate.

1. True
2. False

4-20. To keep work from slipping, it is good practice to place what material between the work and the faceplate?

1. Wood
2. Rubber
3. Paper
4. Felt

4-21. Cutting speeds on a lathe are stated in what units.

1. Revolutions per minute
2. Feet per minute
3. Inches per revolution
4. Thousandths per revolution

4-22. A 1-inch piece of round stock that has a cutting speed of 100 feet per minute should be run at approximately what speed?

1. 382 rpm
2. 400 rpm
3. 764 rpm
4. 1200 rpm

4-23. To offer the greatest support, a center rest should be placed in what position?

1. Near the tailstock
2. In the middle of the work
3. Near the headstock
4. On top of the work

4-24. For greater accuracy when facing a workpiece to a given thickness, you should set the compound rest at what angle?

1. 10°
2. 15°
3. 30°
4. 45°

4-25. A depth of cut of 0.040 inch reduces the diameter of a lathe workpiece what amount?

1. 0.020 in.
2. 0.040 in.
3. 0.080 in.
4. 0.120 in.

4-26. Which of the following lathe operations requires the highest cutting speeds?

1. Rough facing
2. Rough turning
3. Thread cutting
4. Finish turning

4-27. Which of the following is NOT an advantage of using coolant?

1. A heavier feed
2. A heavier depth of cut
3. Prolonged cutting tool life
4. A slower speed

4-28. Which of the following actions will help stop chatter in a lathe tool bit?

1. Increase speed
2. Strengthen the tool support train
3. Decrease feed
4. Grind a larger radius on the tool bit

4-29. You are rough turning a shaft on a lathe. You should leave the diameters oversize by what amount for finishing?

1. 1/64 in.
2. 1/32 in.
3. 1/16 in.
4. 1/8 in.

4-30. Shoulders are commonly located with a parting tool to eliminate the need for what process?

1. Using a pointed turning tool
2. Facing the shoulder
3. Cutting a fillet
4. Detailed measuring of lengths during turning

4-31. A parting tool is set at what angle from the center line?

1. 30°
2. 45°
3. 60°
4. 90°

4-32. Failure to apply enough feed pressure to a drill bit is likely to cause what problem?

1. An overheated drill
2. Chatter
3. A damaged workpiece
4. A broken bit

4-33. When a boring bar is mounted between centers on a lathe, you should use which of the following feeds?

1. Compound-rest
2. Cross
3. Longitudinal
4. Both 2 and 3 above

4-34. You plan to machine ream a 1.000 inch hole. You should first bore the hole undersize by what amount?

1. 1/64 in.
2. 1/32 in.
3. 1/16 in.
4. 1/8 in.

4-35. In roughing and knur1ing a metal, the roughing speed should be in what relation to the knurling speed?

1. One-halt
2. Equal to
3. Two-times
4. Three times

4-36. When you operate a toolpost grinder, excessize speed will cause which of the following problems?

1. Overheated work
2. An overheated grinding wheel
3. Oversized work
4. Chatter

4-37. What type of wheel dresser is used to dress a toolpost grinding wheel?

1. Carbide
2. Aluminum oxide
3. Diamond
4. Ceramic

4-38. The spindle speeds of a toolpost grinder are changed by what means?

1. An electric switch
2. Various sizes of pulleys
3. Change gears
4. Various sizes of spindles

4-39. What area of the toolpost grinder is used to center it on the lathe?

1. The housing
2. The spindle center hole
3. The motor
4. The ways

4-40. When setting over the tailstock to cut a taper, you should use what gauge for the final adjustment?

1. A bevel protractor
2. A sine bar
3. A dial indicator
4. A vernier height gauge

4-41. What taper has the greatest included angle?

1. Brown and Sharp
2. Morse
3. Milling machine
4. Pipe

4-45. A 4-inch long tapered workpiece has a diameter of 3 inches on one end and 3 3/8 inches on the opposite end. What is the taper per foot of this workpiece?

1. 1 1/8 in.
2. 1/8 in.
3. 3/8 in.
4. 1/2 in.

4-43. Short, steep tapers are usually cut on a lathe by using which of the following methods?

1. Taper-attachment
2. Compound-rest
3. Offset-center
4. Simultaneous-feed

4-44. To accurately bore a long taper on a lathe, what method is best?

1. Plunge-cut
2. Tailstock-setover
3. Taper-attachment
4. Compound-rest

4-45. When the taper attachment is used on a lathe, the depth of cut is controlled by what screw?

1. Lead
2. Crossfeed
3. Compound-rest feed
4. Longitudinal feed

4-46. The accuracy of a bored taper should be checked with which of the following gauges?

1. A bevel protractor
2. An inside micrometer
3. A dial-indicator cylinder gauge
4. A plug gauge

4-47. When you bore a taper with a tool bit that is off center, it will cause which of the following problems?

1. An inaccurate taper
2. Overheating
3. A broken tool bit
4. An off-center hole

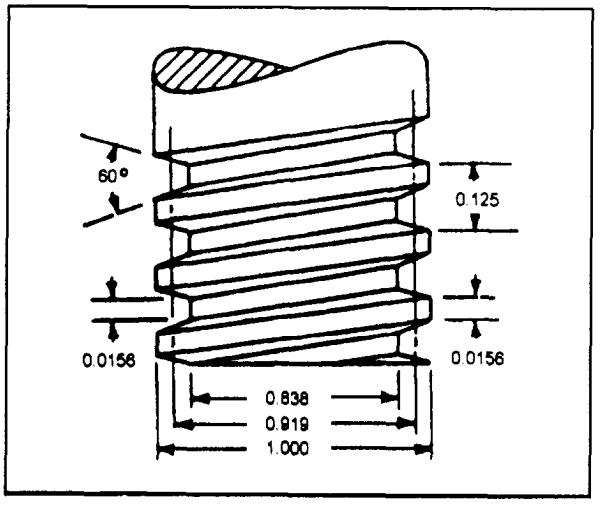

Figure 4A

IN ANSWERING QUESTIONS 4-48 THROUGH 4-50, REFER TO FIGURE: 4A.

4-48. What is the pitch of the screw thread?

1. 0.0625 in.
2. 0.125 in.
3. 0.162 in.
4. 0.919 in.

4-49. What dimensions of the thread are equal?

1. The crest width and root width
2. The crest width and half pitch
3. The crest diameter and root diameter
4. The root diameter and pitch diameter

4-50. What is the major diameter of the thread?

1. 0.125 in.
2. 0.838 in.
3. 0.919 in.
4. 1.000 in.

4-51. What is the slant depth of an American Standard (external) thread with 10 threads per inch?

1. 0.0613 in.
2. 0.0750 in.
3. 0.1000 in.
4. 0.6250 in.

4-52. What instrument is used to set a V-form threading tool true with the work?

1. A bevel protractor
2. A screw pitch gauge
3. A center gauge
4. A thread dial indicator

4-53. Failure to set a threading tool perpendicular to the work axis will cause which of the following problems?

1. The pitch will be too large
2. The pitch diameter will be too small
3. The helix angle will be too short
4. The angle of the thread will be incorrect

4-54. What is the included angle of an Acme screw thread?

1. 14°
2. 29°
3. 30°
4. 45°

4-55. Square threads are used for which of the following applications?

1. Lead screws
2. Body bond studs
3. Jack screws
4. Jeweler's screws

4-56. To cut square threads with a 1/4-inch pitch on a screw, you should use a tool with what cutting edge width?

1. 0.125 in.
2. 0.127 in.
3. 0.500 in.
4. 0.502 in.

4-57. A tapered pipe thread has what amount of taper?

1. 1/8 in. per ft
2. 1/4 in. per ft
3. 1/2 in. per ft
4. 3/4 in. per ft

4-58. The tolerance of a thread increases as the class number increases?

1. True
2. False

4-59. What method of checking the fit of threads is the most accurate?

1. A go no-go gauge
2. A thread micrometer
3. Wires
4. A screw pitch gauge

4-60. When a thread micrometer is not available, you can measure the pitch diameter of a V-form thread with what gauge?

1. A depth micrometer
2. A feeler gauge
3. An ordinary micrometer and three wires
4. A plug gauge

4-61. When you are cutting V-form threads, it is customary to place the compound rest of the lathe at what angle?

1. 14 1/2°
2. 29 1/2°
3. 30°
4. 45°

4-62. When cutting internal threads on a long shaft, you should use what lathe attachment?

1. Follower rest
2. Tailstock
3. Steady rest
4. Six-jaw chuck

4-63. When you are threading and a tool bit becomes misaligned, you should turn what screws to correct the problem?

1. Compound rest and lead
2. Cross feed and lead
3. Compound rest and cross feed
4. Compound rest and tailstock

4-64. What gauge is used to accurately count fine pitches of screw threads?

1. Ruler
2. Screw pitch
3. Protractor
4. Micrometer

4-65. A very light cut is usually turned on the surface of work that is to be threaded to check what measurement?

1. The thread angle
2. The root diameter
3. The pitch
4. The crest width

4-66. What part of a lathe is used to determine when to engage the half-nuts?

1. The lead screw
2. The micrometer collar
3. The thread stop
4. The thread dial

4-67. To cut odd-numbered threads, the half-nuts are engaged at any numbered line.

1. True
2. False

4-68. The most common chamfer used to finish the thread of a capscrew has what angle?

1. 15°
2. 30°
3. 45°
4. 60°

4-69. To cut a thread with a triple lead and 18 threads per inch, you should set up the lathe to cut how many threads per inch?

1. 6
2. 12
3. 18
4. 54

4-70. When cutting multiple-lead threads on a faceplate, the number of leads that you can cut is determined by what characteristic of the face plate?

1. Diameter
2. Number of slots
3. Thickness
4. Length